

IN THE CLAIMS

1. (Previously Presented) A method to support displaying management information in a graphical user interface, the method comprising:
  - receiving selection of multiple entries in a hierarchy, the selection including multiple managed entities in a network;
  - displaying a management information view that includes management information associated with the multiple managed entities in the network;
  - displaying a drill down menu associated with the management information view, the drill down menu including selectable drill down options that correspond to respective drill down functions selectively applied to the management information associated with the multiple managed entities;
  - identifying a selected drill down option chosen from the drill down menu;
  - producing a drill down view by applying the respective drill down function associated with the selected drill down option to the management information associated with the multiple managed entities, the produced drill down view including a presentation of the management information based on the applied respective drill down function;
  - displaying the drill down view on the graphical user interface; and
  - continuing to display the drill down menu even after producing the drill down view for selection of another drill down option from the drill down menu and further drilling down with respect to the produced drill down view.
2. (Previously Presented) A method as in claim 1, wherein the respective drill down function associated with the selected drill down option identifies a particular category in which to drill down to a lower level with respect to

the management information associated with the multiple managed entities.

3. (Previously Presented) A method as in claim 2, wherein displaying the drill down menu includes:
  - displaying the drill down menu to include drill down options associated with managed entities in a storage area network, the drill down menu including at least one of the following drill down options: database, database file, file system, volume group, host device, HBA (Host Bus Adapter), storage device, pool, port/storage group, unallocated devices.
4. (Previously Presented) A method as in claim 1, wherein displaying the management information view includes:
  - receiving a selection of a type of management information view in which to display management information associated with the multiple managed entities ; and
  - based on the selection of a type of management information view, applying a display function to the management information associated with the multiple managed entities in the network to graphically display the management information.
5. (Previously Presented) A method as in claim 1, wherein displaying a management information view includes:
  - maintaining a database of managed objects associated with managed entity icons, the managed entity icons corresponding to managed entities of a storage area network; and
  - upon detecting selection of the multiple managed entity icons for producing a management information view, retrieving multiple corresponding managed objects stored in the database associated with the selected multiple managed entity icons to identify the management

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information associated with the selection of the at least one managed entity icon.

6. (Previously Presented) A method as in claim 1 further comprising:
  - allocating a first portion of a display screen to include the hierarchy, the hierarchy including selectable icons representing managed entities of a storage area network;
  - allocating a second portion of the display screen to include the management information view associated with the multiple managed entities in the network;
  - allocating a third portion of the display screen to display a detailed view including separately listed entries of management information for each of the multiple managed entities in the network displayed in the second portion of the display screen; and
  - allocating a fourth portion of the display screen to include the drill down menu.
7. (Previously Presented) A method as in claim 1 further comprising:
  - in relation to the management information view including management information associated with the multiple managed entities in the network, displaying a detailed view of individually presented management information for each of the multiple managed entities.
8. (Previously Presented) A method as in claim 7, wherein the management information in the management information view includes a multi-axis graph of collective management information associated with multiple managed entities of the network.

9. (Original) A method as in claim 7 further comprising:  
providing corresponding icons on the display screen to enable a user to selectively hide the management information view.
10. (Previously Presented) A method as in claim 1, wherein the management information in the management information view includes a multi-axis single graph of collective management information associated with the multiple managed entities.
11. (Original) A method as in claim 1 further comprising:  
displaying path information in relation to the management information view, the path information including: i) an entry corresponding to a present drill down level view of the displayed management information in the management view, and ii) at least one entry of a previous drill down level view of previously displayed management information.
12. (Previously Presented) A method as in claim 11, wherein the path information includes entries indicating a sequence of drill down option selected from the drill down menu to view the present drill down menu view; and  
wherein the at least one entry of the previous drill down level view may be selected by a user to change contents of the management information view back to a corresponding previously displayed management information view.
13. (Original) A method as in claim 1 further comprising:  
highlighting a subset of drill down options in the drill down menu depending on which of the drill down options may be selected by a user to produce a next displayable drill down view.

14. (Original) A method as in claim 1 further comprising:
  - displaying a hierarchy of managed entity icons that may be traversed based on use of a drill down technique; and
  - in relation to at least a portion of the managed entity icons in the hierarchy, providing a display region in relation to the managed entity icons to receive an input selection by a user of which management information to display for multiple selected managed entities of the network.
15. (Original) A method as in claim 1, wherein the drill down menu includes at least two sets of selectable drill down options, a first set of selectable drill down options related to storage features of a storage area network, a second set of drill down options related to host features of the storage area network.
16. (Previously Presented) A method as in claim 1 further comprising:
  - in relation to the management information view including management information associated with the at least one managed entity in the network, displaying a detailed view of individually presented management information for each of the multiple managed entities;
  - enabling a user to individually select each of the multiple managed entities in the detailed view; and
  - wherein producing a drill down view further includes applying the respective drill down function to management information associated with individually selected managed entities displayed in the detailed view.

17. (Previously Presented) A method of displaying management information on a display screen, the method comprising:
- on a first portion of the display screen, displaying a hierarchy of selectable icons representing managed entities of a storage area network;
  - on a second portion of the display screen, displaying a detailed view of separately listed management information for each of at least two managed entities selected from the hierarchy; and
  - on a third portion of the display screen, displaying a drill down menu of multiple selectable drill down options, the drill down menu being continuously displayed even after selection of one of the multiple selectable drill down options, the drill down menu enabling drilling down with respect to at least a portion of the management information displayed in the detailed view of separately listed management information.
18. (Previously Presented) A method as in claim 17 further comprising:
- highlighting a first selectable drill down option and a second selectable drill down option in the drill down menu to indicate that from the first selectable drill down option and the second selectable drill down option can be selected by a viewer and applied to the management information in the second portion of the display screen; and
  - in response to receiving selection of the first selectable drill down option from the drill down menu:
    - i) updating the separately listed management information for each of the at least two managed entities selected from the hierarchy by providing a drill down view in accordance with the selection of the first selectable drill download; and
    - ii) discontinuing highlighting of the first selectable drill down option from the drill down menu to indicate that the first selectable drill down option can no longer be selected to drill down with

respect to a current drill down level view of the management information in the second portion of the display screen.

19. (Previously Presented) A method as in claim 18, wherein the drill down menu includes at least two sets of selectable drill down options, a first set of selectable drill down options grouped and labeled to indicate that the first set of selectable drill down options can be used to drill down with respect to storage features of a storage area network, a second set of drill down options grouped and labeled to indicate that the second set of selectable drill down options can be used to drill down with respect to host features of the storage area network.
20. (Previously Presented) A method as in claim 18 further comprising:
  - on a fourth portion of the display screen, displaying path information including: i) an entry corresponding to a drill down view of presently displayed management information, and ii) at least one entry corresponding to a previously displayed drill down view of management information.
21. (Previously Presented) A computer system supporting management information views associated with a storage area network, the computer system comprising:
  - a processor;
  - a memory unit that stores instructions associated with an application executed by the processor;
  - a communication interface that supports communication with other nodes of the storage area network; and
  - an interconnect coupling the processor, the memory unit, and the communication interface, enabling the computer system to execute the application and perform operations of:

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receiving selection of multiple entries in a hierarchy, the selection including multiple managed entities in a network;

displaying a management information view that includes management information associated with the multiple managed entities in the network;

displaying a drill down menu associated with the management information view, the drill down menu including selectable drill down options that correspond to respective drill down functions selectively applied to the management information associated with the multiple managed entities;

identifying a selected drill down option chosen from the drill down menu;

producing a drill down view by applying the respective drill down function associated with the selected drill down option to the management information associated with the multiple managed entities, the produced drill down view including a presentation of the management information based on the applied respective drill down function; displaying the drill down view on the graphical user interface; and

continuing to display the drill down menu even after producing the drill down view for selection of another drill down option from the drill down menu and further drilling down with respect to the produced drill down view.

22. (Previously Presented) A computer system as in claim 21, wherein the respective drill down function associated with the selected drill down option identifies a particular category of multiple categories in which to drill down to a lower level with respect to the management information associated with the at least one managed entity.



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31. (Original) A computer system as in claim 21 that additionally performs operations of:

displaying path information in relation to the management information view, the path information including: i) an entry corresponding to a present drill down level view of the displayed management information in the management view, and ii) at least one entry of a previous drill down level view of previously displayed management information.

32. (Original) A computer system as in claim 31, wherein the at least one entry of the previous drill down level view may be selected by a user to change contents of the management information view back to a corresponding previously displayed management information view.

33. (Original) A computer system as in claim 21 that additionally performs operations of:
- highlighting a subset of drill down options in the drill down menu depending on which of the drill down options may be selected by a user to produce a next displayable drill down view.
34. (Original) A computer system as in claim 21 that additionally performs operations of:
- displaying a hierarchy of managed entity icons that may be traversed based on use of a drill down technique; and
  - in relation to at least a portion of the managed entity icons in the hierarchy, providing a display region in relation to the managed entity icons to receive an input selection by a user of which management information to display for multiple selected managed entities of the network.
35. (Original) A computer system as in claim 21, wherein the drill down menu includes at least two sets of selectable drill down options, a first set of selectable drill down options related to storage features of a storage area network, a second set of drill down options related to host features of the storage area network.
36. (Previously Presented) A computer system as in claim 21 that additionally performs operations of:
- in relation to the management information view including management information associated with the multiple managed entities in the network, displaying a detailed view of individually presented management information for each of the at least one managed entities;
  - enabling a user to individually select each of the multiple managed entities in the detailed view; and

wherein producing a drill down view further includes applying the respective drill down function to management information associated with individually selected managed entities displayed in the detailed view.

37. (Previously Presented) A computer system for displaying management information views associated with a storage area network, the computer system comprising:
- a processor;
  - a memory unit that stores instructions associated with an application executed by the processor;
  - a communication interface that supports communication with nodes of the storage area network; and
  - an interconnect coupling the processor, the memory unit, and the communication interface, enabling the computer system to execute the application and perform operations of:
    - on a first portion of a display screen, displaying a vertical hierarchy of selectable icons representing managed entities of a storage area network;
    - on a second portion of the display screen, displaying a detailed view of separately listed management information for each of the at least two selected managed entities selected from the hierarchy; and
    - on a third portion of the display screen, displaying a drill down menu including multiple selectable drill down options, the drill down menu being continuously displayed even after selection of one of the multiple selectable drill down options, the drill down menu enabling drilling down with respect to at least a portion of the management information displayed in the detailed view of separately listed management information.

38. (Previously Presented) A computer system as in claim 37 that additionally performs operations of:

highlighting a first selectable drill down option and a second selectable drill down option in the drill down menu to indicate that from the first selectable drill down option and the second selectable drill down option can be selected by a viewer and applied to the management information in the second portion of the display screen; and

in response to receiving selection of the first selectable drill down option from the drill down menu:

i) updating the separately listed management information for each of the at least two managed entities selected from the hierarchy by providing a drill down view in accordance with the selection of the first selectable drill download; and

ii) discontinuing highlighting of the first selectable drill down option from the drill down menu to indicate that the first selectable drill down option can no longer be selected to drill down with respect to a current drill down level view of the management information in the second portion of the display screen.

39. (Previously Presented) A computer system as in claim 38, wherein the drill down menu includes at least two sets of selectable drill down options, a first set of selectable drill down options grouped and labeled to indicate that the first set of selectable drill down options can be used to drill down with respect to storage features of the storage area network, a second set of drill down options grouped and labeled to indicate that the second set of selectable drill down options can be used to drill down with respect to host features of the storage area network.

40. (Previously Presented) A computer system as in claim 38 that additionally performs operations of:

on a fourth portion of the display screen, displaying path information including: i) an entry corresponding to a drill down view of presently displayed management information, and ii) at least one selectable entry corresponding to a previously displayed drill down view of management information.

41. (Previously Presented) A computer program product including a computer-readable medium having instructions stored thereon for processing data information, such that the instructions, when carried out by a processing device, enable the processing device to perform operations of:

displaying a management information view that includes management information associated with at least one managed entity in a network;

displaying a drill down menu associated with the management information view, the drill down menu including selectable drill down options that correspond to respective drill down functions selectively applied to the management information associated with the at least one managed entity;

identifying a selected drill down option chosen from the drill down menu;

producing a drill down view by applying the respective drill down function associated with the selected drill down option to the management information associated with the at least one managed entity, the produced drill down view including a presentation of the management information based on the applied respective drill down function;

displaying the drill down view on the graphical user interface; and  
continuing to display the drill down menu even after producing the drill down view for selection of another drill down option from the drill down menu and further drilling down with respect to the produced drill down view.

42. (Previously Presented) A computer system for supporting management information views associated with a storage area network, the computer system including:
- means for displaying a management information view that includes management information associated with at least one managed entity in a network;
  - means for displaying a drill down menu associated with the management information view, the drill down menu including selectable drill down options that correspond to respective drill down functions selectively applied to the management information associated with the at least one managed entity;
  - means for identifying a selected drill down option chosen from the drill down menu;
  - means for producing a drill down view by applying the respective drill down function associated with the selected drill down option to the management information associated with the at least one managed entity, the produced drill down view including a presentation of the management information based on the applied respective drill down function; and
  - means for displaying the produced drill down view
  - means for continuing to display the drill down menu even after producing the drill down view for selection of another drill down option from the drill down menu and further drilling down with respect to the produced drill down view.
43. (Previously Presented) A method as in claim 20 further comprising:
- displaying the entry corresponding to the drill down view of presently displayed management information to include a label corresponding to a selectable drill down option selected by a viewer to view the current drill down level; and

displaying the path information to include entries corresponding to previously viewed drill down levels of the management information.

44. (Previously Presented) A method as in claim 17 further comprising:
- on a fourth portion of the display screen, displaying path information including entries indicating a sequence of drill down options selected by a viewer, each of the entries being selectable by the viewer to revert back to a previous drill down level.
45. (Previously Presented) A method as in claim 1, wherein displaying the drill down menu includes:
- highlighting a first group of the selectable drill down options to indicate that at least a first selectable drill down option and a second selectable drill down option in the first group can be selected to drill down with respect to the management information associated with the multiple managed entities; and
  - de-highlighting a second group of the selectable drill down options to indicate that at least a third selectable drill down option and a fourth selectable drill down option in the second group cannot be selected to drill down with respect to the management information associated with the multiple managed entities.
46. (Previously Presented) A method as in claim 45, wherein identifying the selected drill down option includes receiving selection of the first selectable drill down option in the first group, the method further comprising:
- in response to receiving the selection of the first selectable drill down option, i) initiating display of the management information in accordance with the first selectable drill down option, and ii) de-

highlighting the first selectable drill down option to indicate that the first selectable drill down option cannot be selected.

47. (Previously Presented) A method as in claim 46 further comprising:  
displaying path information including a first entry corresponding to the selection of the first selectable drill down option in the drill down menu.
48. (Previously Presented) A method as in claim 47 further comprising:  
receiving selection of the second selectable drill down option in the first group;  
in response to receiving the selection of the second selectable drill down option, i) initiating display of a further drill down view of the management information in accordance with the second selectable drill down option, and ii) de-highlighting the second selectable drill down option in the drill network menu.
49. (Previously Presented) A method as in claim 48 further comprising:  
displaying the path information to include a second entry, which follows the first entry in the path information, the second entry corresponding to the selection of the second selectable drill down option in the drill down menu.
50. (Previously Presented) A method as in claim 49 further comprising:  
enabling selection of the first entry in the path information;  
in response to receiving selection of the first entry in the path information, displaying the management information in accordance with the first selectable drill down option.